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EXAMINER	
FOSTER, CHRISTINE E	

ART UNIT	PAPER NUMBER
1641	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/759,411	GOMEZ ET AL.	
	Examiner	Art Unit	
	Christine Foster	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15 and 17-22* is/are pending in the application.

4a) Of the above claim(s) *1-12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-15 and 17-22* is/are rejected.

7)☒ Claim(s) *13,14 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/19/06 has been entered.

Claims 1-15 and 17-22 are pending in the application, with claims 1-12 currently withdrawn.

Objections/Rejections Withdrawn

2. The objection to the specification is withdrawn in response to Applicant's amendments to the abstract.

3. The objection to claim 13 set forth in the previous Office action is withdrawn in response to Applicant's amendments.

4. The rejection of claim 13 under 35 USC 112, 2nd paragraph set forth in the previous Office action is withdrawn in response to Applicant's amendments.

Claim Objections

5. Claim 13 is objected to because of the following informalities:

The claim recites in part (b) a binding pair member "capable of binding to the binding site for intrinsic factor specific autoantibody", which is confusing because although it states that

the binding pair member is capable of binding to "the binding site," it does not clearly state what molecule it is actually capable of binding--i.e. intrinsic factor. Similarly, in part (c) the claim recites that vitamin B12 is "capable of binding to the binding site for intrinsic factor specific autoantibody", which only indirectly refers to intrinsic factor. It is suggested that the claim clearly recite that the binding pair member is capable of binding to the labeled intrinsic factor. See for example the specification at [015].

In addition, the claim is also objected to because the description of components (a) and (c) is confusing. The claim recites in part (a) labeled intrinsic factor that comprises a binding site for "intrinsic factor specific autoantibody". In part (c), the claim refers to vitamin B12 and states that "vitamin B12 is capable of binding to the binding site for intrinsic factor specific autoantibody". This presents a source of possible confusion because it would seem that where vitamin B12 binds to intrinsic factor is an inherent characteristic of vitamin B12 (and of intrinsic factor). The claim language in parts (a) and (c) noted above is apparently being used to convey that the autoantibody to be detected by the test kit is one that binds to intrinsic factor at the vitamin B12 binding site (i.e. that the method detects Type I blocking antibodies as discussed in the specification at [025]). This is more clearly recited in the claim's preamble. However, this is clearly a limitation on the type of *autoantibody to be detected* and not a limitation on vitamin B12 or intrinsic factor, since although there are other autoantibodies (i.e. Type II) which do not bind to intrinsic factor at the vitamin B12 binding site, there is no disclosure, for example, of vitamin B12 variants that bind to different sites on intrinsic factor.

6. Claims 14 and 21 are objected to because the phrase "said solid phase...are paramagnetic particles" lacks subject-verb agreement.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 13-15 and 17-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Written Description

9. Claim 13 recites an "**interference blocking reagent**" that will specifically bind to vitamin B12. The specification discloses at [0019] that "[t]he interference blocking reagent is capable of specifically binding to a substance that may be present in the sample, which substance is capable of binding to the autoantibody binding site of the labeled receptor to block or interfere with the binding of autoantibody to the site." Thus, the specification identifies the interference blocking reagent by means of a functional characteristic, i.e. the capacity to specifically bind a substance that in turn is capable of binding to the autoantibody binding site of the labeled receptor (intrinsic factor). The specification also provides two examples of interference blocking reagents that will specifically bind to vitamin B12, namely antibodies directed against vitamin B12 and R-protein ([0012] and [0034]; see also claims 19 and 21-22).

The MPEP states that the purpose of the written description requirement is to ensure that the inventor had possession, as of the filing date of the application, of the specific subject matter later claimed. The MPEP lists factors that can be used to determine if sufficient evidence of possession has been furnished in the disclosure of the application. These include "level of skill and knowledge in the art, partial structure, physical and/or chemical properties, functional characteristics alone or coupled with a known or disclosed correlation between structure and function, and the method of making the claimed invention." MPEP 2163.

Further, for a broad generic claim, the specification must provide adequate written description to identify the genus of the claim. The MPEP states that:

"The written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species by actual reduction to practice ...or by disclosure of relevant, identifying characteristics, i.e., structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the claimed genus" MPEP 2163.

In *Regents of the University of California v. Eli Lilly & Co.* the courts stated:

"A written description of an invention involving a chemical genus, like a description of a chemical species, 'requires a precise definition, such as by structure, formula, [or] chemical name' of the claimed subject matter sufficient to distinguish it from other materials." *Fiers*, 984 F.2d at 1171, 25 USPQ2d at 1606; *In re Smythe*, 480 F.2d 1376, 1383, 178 USPQ 279, 284985 (CCPA 1973) ("In other cases, particularly but not necessarily, chemical cases, where there is unpredictability in performance of certain species or subcombinations other than those specifically enumerated, one skilled in the art may be found not to have been placed in possession of a genus...") *Regents of the University of Califomia v. Eli Lilly & Co,* 43 USPQ2d 1398.

The MPEP further states that if a biomolecule is described only by a functional characteristic, without any disclosed correlation between function and structure of the sequence, it is "not sufficient characteristic for written description purposes, even when accompanied by a

method of obtaining the claimed sequence." MPEP 2163. The MPEP does state that for a generic claim the genus can be adequately described if the disclosure presents a sufficient number of representative species that encompass the genus. MPEP 2163. If the genus has a substantial variance, the disclosure must describe a sufficient variety of species to reflect the variation within that genus. See MPEP 2163. Although the MPEP does not define what constitute a sufficient number of representative species, the courts have indicated what do not constitute a representative number of species to adequately describe a broad generic. In *Gostelli*, the courts determined that the disclosure of two chemical compounds within a subgenus did not describe that subgenus. *In re Gostelli* 872, F.2d at 1012, 10 USPQ2d at 1618.

With regard to the instant case, the claims are drawn to test kits encompassing a genus of "**interference blocking reagents**", which genus is described only by a functional characteristic (specific binding to vitamin B12). However, the specification fails to disclose any other identifying characteristics of such reagents. For example, there is no disclosure of any partial or complete structure shared by members of the genus of "interference blocking reagents", nor any disclosure of other physical and/or chemical properties shared among members of the genus. Moreover, there is no known or disclosed correlation between structure and function (ability to specifically bind vitamin B12 in this case). The two disclosed examples, (1) antibodies against vitamin B12 and (2) the transport protein R-protein, vary substantially in structure and have *no disclosed common structure that is correlated with ability to bind vitamin B12.*

Accordingly, it is deemed that the specification fails to provide adequate written description for the genus of "interference blocking reagents" as claimed and does not reasonably

convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the entire scope of the claimed invention.

New Matter

10. Claim 13 as amended recites a test kit comprising "a container containing an interference blocking reagent", which represents a departure from the specification and claims as originally filed. Applicant's response stated that no new matter was introduced (p. 8) but did not specifically indicate where support may be found for the limitation of a *container containing the interference blocking reagent*. The Examiner was unable to find support for this limitation in the specification and claims as originally filed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 13-15, 17-18, and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. ("A Rapid Fully Automated Assay For the Detection of Intrinsic Factor Blocking Antibodies on Beckman Coulter's Access Immunoassay System" (June, 2001) *Clinical Chemistry* Vol. 47, No. S6, pp. A12 (print); Meeting Info: 53rd Annual Meeting of the AACC/CSCC. Chicago, IL, USA, July 29-August 02, 2001, American Association for Clinical Chemistry, of record) in view of Hoyle et al. (US 5,451,508) and Zuk et al. (US 4,208,479).

Smith et al. teach an assay for detection of intrinsic factor blocking autoantibodies which comprises labeled intrinsic factor ("intrinsic factor-alkaline phosphatase conjugate") and a binding pair member (mouse anti-intrinsic factor antibody) bound to paramagnetic particles (see the entire document). The mouse anti-IF antibody binds to intrinsic factor at or near the binding site of intrinsic factor blocking autoantibody ("IFAb") and competes with IFAb for binding to intrinsic factor. The assay is performed by combining a sample with the intrinsic factor conjugate and mouse anti-IF paramagnetic particles. Smith et al. teach that measurement of intrinsic factor blocking antibody is performed as a follow-up to a low vitamin B12 result when investigating the possibility of pernicious anemia ("Introduction").

Smith et al. differs from the claimed invention in that the reference fails to specifically teach an interference blocking reagent that will specifically bind to vitamin B12 as claimed. The reference also fails to specifically recite a "test kit" or containers containing the labeled intrinsic factor, binding pair member, and interference blocking reagent.

Hoyle et al. teach reagents for determination of vitamin B12 in a sample (see the entire document, in particular the abstract and column 2, line 4 to column 3, line 64). In particular, the reference teaches a competitive immunoassay that uses a monoclonal antibody specific for

vitamin B12 that will specifically bind to vitamin B12 in the sample. The antibody can be contained in a container such as a tube or microtiter plate (column 3, lines 35-49). Hoyle et al. teach that the use of this reagent enables an exact determination of B12 in serum in a rapid, simple and reproducible manner (column 2, lines 4-9).

Zuk et al. teach that the packaging of ingredients together in a kit and the use of containers for reagents was well known in the art and would have been obvious to one of ordinary skill at the time of the invention. For example, Zuk et al. (US 3,413,198) that in performing assays it is a matter of substantial convenience to provide the reagents combined in a kit (column 22, lines 20-52 in particular). Zuk et al. also teach containers ("vessel") for the reagents. The skilled artisan would also immediately envisage the benefit of providing containers in order to contain the reagents.

Therefore, it would have been obvious to one of ordinary skill in the art to package the reagents of Smith et al. in containers and to combine them into a kit for convenience as taught by Zuk et al. It would have been further obvious to include the container containing the monoclonal anti-vitamin B12 antibody taught by Hoyle et al. in the kit of Smith et al. for convenience as taught by Zuk et al. Taken together with the teachings of Smith et al. that clinical investigation of pernicious anemia involves both (1) determination of vitamin B12 followed by (2) measurement of intrinsic factor blocking antibody, one skilled in the art would have found it obvious to package together all reagents necessary to carry out such a clinical investigation in a kit for the benefit of convenience (as taught by Zuk et al.). One would be motivated to include the monoclonal antibody of Hoyle et al. for determination of vitamin B12 because Hoyle et al. teach

that the reagent enables an exact determination of vitamin B12 in serum in a rapid, simple, and reproducible assay.

13. Claims 13-15, 19, and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. ("A Rapid Fully Automated Assay For the Detection of Intrinsic Factor Blocking Antibodies on Beckman Coulter's Access Immunoassay System" (June, 2001) *Clinical Chemistry* Vol. 47, No. S6, pp. A12 (print); Meeting Info: 53rd Annual Meeting of the AACC/CSCC. Chicago, IL, USA, July 29-August 02, 2001, American Association for Clinical Chemistry, of record) in view of Herbert et al. (US 4,680,273, of record) and Zuk et al. (US 4,208,479).

Smith et al. is as discussed above, which teaches an assay for detection of intrinsic factor blocking autoantibodies which comprises labeled intrinsic factor ("intrinsic factor-alkaline phosphatase conjugate") and a binding pair member (mouse anti-intrinsic factor antibody) bound to paramagnetic particles (see the entire document). The mouse anti-IF antibody binds to intrinsic factor at or near the binding site of intrinsic factor blocking autoantibody ("IFAb") and competes with IFAb for binding to intrinsic factor. The assay is performed by combining a sample with the intrinsic factor conjugate and mouse anti-IF paramagnetic particles. Smith et al. teach that measurement of intrinsic factor blocking antibody is performed as a follow-up to a low vitamin B12 result when investigating the possibility of pernicious anemia ("Introduction").

Smith et al. differs from the claimed invention in that the reference fails to specifically teach an interference blocking reagent that will specifically bind to vitamin B12 as claimed. The

reference also fails to specifically recite a "test kit" or containers containing the labeled intrinsic factor, binding pair member, and interference blocking reagent.

Herbert et al. teaches assays and kits for determination of vitamin B12 in a sample in which R-protein is used as a binder specific for vitamin B12 (see the entire document, in particular the abstract; column 4, lines 15-62; column 5, lines 1-42; column 6, lines 8-59; column 7, lines 22-58). The reference teaches that R-protein is a protein binder for total corrinoids and can be used in a competitive protein binding type of assay, which is a preferable assay format for determining vitamin B12. Such assays are particularly advantageous in that it is possible to reliably and accurately determine vitamin B12 in a patient sample with reduced or eliminated occurrences of "false positives" and/or "false negatives" (column 7, lines 49-58).

Zuk et al. teach that the packaging of ingredients together in a kit and the use of containers for reagents was well known in the art and would have been obvious to one of ordinary skill at the time of the invention. For example, Zuk et al. (US 3,413,198) that in performing assays it is a matter of substantial convenience to provide the reagents combined in a kit (column 22, lines 20-52 in particular). Zuk et al. also teach containers ("vessel") for the reagents. The skilled artisan would also immediately envisage the benefit of providing containers in order to contain the reagents.

Therefore, it would have been obvious to one of ordinary skill in the art to package the reagents of Smith et al. in containers and to combine them into a kit for convenience as taught by Zuk et al. It would have been further obvious to include the R-protein of Herbert et al. in the kit of Smith et al. for convenience as taught by Zuk et al. Taken together with the teachings of Smith et al. that clinical investigation of pernicious anemia involves both (1) determination of vitamin

B12 followed by (2) measurement of intrinsic factor blocking antibody, one skilled in the art would have found it obvious to package together all reagents necessary to carry out such a clinical investigation in a kit for convenience in light of the teachings of Zuk et al. One would be motivated to include the reagent of Herbert et al. for determination of vitamin B12 because Herbert et al. teach that R-protein can be used for a competitive protein binding assay of vitamin B12 that is reliable and accurate.

14. Claims 13-15, 17-18 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newman et al. (US Patent No. 6,942,977, filed May 28, 1993) or, alternatively, Newman et al. (Canadian Patent Application 2,110,109, Information Disclosure Statement filed 4/30/04) in view of Pourfarzaneh (US Patent No. 5,564,104), Manian et al. (US 5,137,609) and Zuk et al. The column and line numbers cited below in reference to Newman et al. refer to the text of the US Patent.

Newman et al. teach diagnostic kits for assaying vitamin B12 in samples, where the kits include (a) intrinsic factor, which may be labeled, and (b) a binding pair member (antibody) that specifically binds to intrinsic factor at the vitamin B12 binding site, and which may be immobilized on a solid phase support (see the entire document, especially the abstract; column 1, lines 54-58; column 2, lines 8-22 and line 45 to column 3, line 9; column 4, lines 1-21; and column 6, lines 12-17). Newman et al. further teach that either the intrinsic factor or the antibody is labeled and one of them is immobilized on a solid support (column 4, lines 12-21).

The antibody of Newman et al. anticipates the claimed limitation of a binding pair member as recited in part (b) that is "capable of binding to the binding site for intrinsic specific factor

autoantibody" in that the antibody to intrinsic factor binds to intrinsic factor at the vitamin B12 binding site (column 6, lines 12-29). Since the "blocking" autoantibodies that interfere with vitamin B12 binding to intrinsic factor compete with vitamin B12, they therefore also bind intrinsic factor at the vitamin B12 binding site (see the preamble of claim 13).

Newman et al. further teach an interference blocking reagent ("material") that will extract free vitamin B12 and other small molecular weight compounds from the sample (column 5, lines 23-36). The reference teaches that it is important to remove free vitamin B12 when assaying for intrinsic factor-specific antibodies that will not be able to bind intrinsic factor or will be released from binding in the presence of vitamin B12. The reference teaches interference blocking reagents including dextran coated charcoal.

Newman et al. differs from the claimed invention in that it fails to specifically teach a kit including an interference blocking reagent *that will specifically bind to vitamin B12 with higher binding affinity and/or specificity than to any other moiety* (see the instant specification at [020]). The reference also fails to specifically teach containers containing the intrinsic factor, binding pair member, and interference blocking reagent.

Pourfarzaneh teach solid phase binders for removing labeled molecules from solution (column 2, lines 5-34 and Table A in particular). Charcoal adsorbents and monoclonal antibodies are taught as binders capable of binding the molecules (column 2, lines 20-34; column 8, lines 8-45 in particular). Examples of biological molecules that may be removed from solution include radiolabeled vitamin B12 (column 2, lines 14-16 in particular).

Manian et al. teaches that monoclonal antibodies can be used for removing undesired components that may interfere in an assay (see especially at column 4, lines 29-51). The

reference teaches that monoclonal antibodies have specificity, are easy to produce in large quantities, and cause precise separation.

Zuk et al. teach that the packaging of ingredients together in a kit and the use of containers for reagents was well known in the art and would have been obvious to one of ordinary skill at the time of the invention. For example, Zuk et al. (US 3,413,198) that in performing assays it is a matter of substantial convenience to provide the reagents combined in a kit (column 22, lines 20-52 in particular). Zuk et al. also teach containers ("vessel") for the reagents. The skilled artisan would also immediately envisage the benefit of providing containers in order to contain the reagents.

Therefore, it would have been obvious to one of ordinary skill in the art to package the reagents of Newman et al. in containers and to combine them into a kit for convenience as taught by Zuk et al. It would have been further obvious to one of ordinary skill in the art to include a container containing the monoclonal antibodies to vitamin B12 taught by Pourfarzaneh in place of the dextran coated charcoal of Newman et al. in order to free vitamin B12 from samples containing antibodies to intrinsic factor (as taught by Newman et al.). One would be motivated to substitute monoclonal antibodies for the charcoal material of Newman given the art-recognized specificity of monoclonal antibodies, for example as taught in Manian et al. One would have reasonable expectation of success because Pourfarzaneh teaches that both charcoal and monoclonal antibodies are suitable reagents for binding to and removing vitamin B12 from solution, which is the same purpose for which charcoal is used by Newman et al.

With regard to claims 14 and 21, Newman et al. teach that the solid support may be magnetic particles (column 6, lines 45-52).

With regard to claims 15 and 20, Newman et al. teach that the intrinsic factor may be labeled with alkaline phosphatase (column 8, line 30-47 and column 6, line 53 to column 7, line 3).

With regard to claim 22, Newman et al. teach that the anti-intrinsic factor antibody is a monoclonal antibody (the abstract and column 2, lines 8-11).

15. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Newman et al. (US Patent No. 6,942,977) or, alternatively, Newman et al. (Canadian Patent Application 2,110,109) in view of Pourfarzaneh, Manian et al., and Zuk et al. as applied to claim 13 above, and further in view of Herbert (US Patent No. 4,680,273).

The references are as discussed above, which fail to specifically teach a test kit comprising **R-protein** as the interference blocking reagent.

Herbert et al. teaches assays and kits for determination of vitamin B12 in a sample in which R-protein is used as a binder specific for vitamin B12 (see the entire document, in particular the abstract; column 4, lines 15-62 and 58-62; column 5, lines 1-42; column 6, lines 8-59; column 7, lines 22-58). The reference teaches that R-protein is a protein binder for total corrinoids and can be used to bind vitamin B12 in solution in a competitive protein binding type of assay, which is a preferable assay format for determining vitamin B12. Such assays are particularly advantageous in that it is possible to reliably and accurately determine vitamin B12 in a patient sample with reduced or eliminated occurrences of "false positives" and/or "false negatives" (column 7, lines 49-58). R-protein may be used alone or in conjunction with the use of coated charcoal (column 5, lines 35-42).

Zuk et al. teach that the packaging of ingredients together in a kit and the use of containers for reagents was well known in the art and would have been obvious to one of ordinary skill at the time of the invention. For example, Zuk et al. (US 3,413,198) that in performing assays it is a matter of substantial convenience to provide the reagents combined in a kit (column 22, lines 20-52 in particular). Zuk et al. also teach containers ("vessel") for the reagents. The skilled artisan would also immediately envisage the benefit of providing containers in order to contain the reagents.

Therefore, it would have been obvious to employ R-protein as the interference blocking reagent as taught by Herbert in the kit of Newman et al. and Pourfarzaneh in order to remove free vitamin B12 from samples containing antibodies to intrinsic factor. It would have been further obvious to provide a container for the R-protein of Herbert et al. and to include the reagent in the kit for convenience as taught by Zuk et al. One would have reasonable expectation of success in substituting R-protein for the monoclonal antibodies capable of binding vitamin B12 because Herbert teaches that R-protein are capable of binding vitamin B12, which is also the purpose of the charcoal and monoclonal antibodies taught by Newman et al. and Pourfarzaneh. In addition, Herbert teaches that R-protein may be used as a vitamin B12 binder in conjunction with coated charcoal methods, such as that of Newman et al.

Response to Arguments

16. Applicant's arguments, filed 6/19/06, have been fully considered. With respect to the rejections of claims 13-15, 17-18 and 20-22 under 35 USC 103 as being unpatentable over Newman in view of Pourfarzaneh and of claim 19 as being unpatentable over the references and

further in view of Herbert, Applicant's arguments have been fully considered but are not found persuasive.

In response to applicant's argument that Newman teaches a "sample" that is fundamentally different in form and function from the "sample" of the claimed invention (Applicant's response, p. 10-12), a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Applicant further argues that the teachings of Pourfarzaneh would obliterate the invention as claimed (p. 12-13), as the use of solid phase binders to remove the interferent would negatively impact the assay. In particular, Applicant appears to argue that the skilled artisan would be led away from the claimed invention by the teachings of Pourfarzaneh, and would remove all solid phase bound material including the binding pair member (p. 12-13). This reasoning appears to be based on the Pourfarzaneh's teaching of charcoal and anti-vitamin B12 antibody as reagents for the removal of *labeled* biological materials from solution. Applicant then appears to conclude that one skilled in the art would therefore be motivated to remove all labeled material in the kit of Newman from solution. The Examiner does not consider this to be a logical progression and disagrees that the skilled artisan would be led on such a course. Applicant has selectively focused on the fact that Pourfarzaneh teaches removal of "labeled" molecules from solution, which is not relevant. The fact that Pourfarzaneh teaches removing *radiolabeled* free vitamin B12 is tangential to the reference teaching of reagents for removing free vitamin B12 from solution. The Examiner finds no reasonable basis on which to conclude

that one skilled in the art would construct the elaborate method postulated by Applicant and somehow extrapolate from the removal of free vitamin B12 in Pourfarzaneh to also remove the labeled intrinsic factor of Newman simply because both of these materials happen to be labeled.

The Pourfarzaneh reference relates to removal of molecules (including vitamin B12) from solution, and teaches binding materials for this purpose. Newman clearly directs the skilled artisan to remove free vitamin B12 from a sample, and teaches the material charcoal for this purpose. Pourfarzaneh also teaches removal of free vitamin B12 from a sample and also that anti-vitamin B12 antibody is suitable for this purpose, in addition to charcoal. Given the well-known specificity of monoclonal antibodies, one skilled in the art would be motivated to include an anti-vitamin B12 antibody as taught by Pourfarzaneh rather than charcoal in the kit of Newman for the same purpose of removing free vitamin B12.

Furthermore, even if one skilled in the art were motivated to combine the Newman and Pourfarzaneh references in such a manner as to physically remove all of the labeled and solid-phase bound complex from solution as argued by Applicant, such process steps are referring to the *intended use* of the claimed invention. Applicant has not asserted any structural differences that would result in the test kit of Newman and Pourfarzaneh as a result of this purported intended use that would distinguish the claimed product from that taught in the prior art. Since the references teach the same reagents, they would be capable of performing the intended use.

In response to applicant's argument (p. 13) that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., **a purely liquid-form of interferent removal**) are not recited in the rejected claim(s). Although the

claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant did not separately argue the limitations of the dependent claims.

Conclusion

17. No claims are allowed.

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Glovsky et al. (US 3,966,896), similar to Pourfarzaneh '104 above, also teach that antibodies as well as dextran-coated charcoal can be used for the purpose of separating free antigens from a sample (see column 7, lines 36-43).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Foster whose telephone number is (571) 272-8786. The examiner can normally be reached on M-F 8:30-5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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